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ABSTRACT

The Center for Educational Research and Evaluation of the University of North Carolina (Greensboro) has been contracted to propose standards, indicators of quality, data collection procedures, and instruments for the evaluation of Georgia public schools mandated by the state legislature. The development of these standards and indicators is discussed. A comprehensive list of standards and indicators was compiled through reviews of literature on educational indicators and effective schools for 10 factors: (1) autonomy of school-site management; (2) instructional leadership; (3) staff stability; (4) parental involvement and support; (5) schoolwide recognition of academic success; (6) maximized learning time; (7) collaborative planning and collegial relationships; (8) sense of community; (9) clear grades and high expectations; and (10) order and discipline. The initial list was subjected to extensive review and revision. The district review panels included: a Technical Advisory Board (TAB) of five national experts in educational evaluation; a departmental TAB of professional educators from Georgia; an advisory committee of 40 Georgia educators and citizens; and a steering committee of 15 members of the preceding group. Appendix A describes the literature review process. Appendix B lists the 18 standards developed. Appendix C describes the proposed use of numeric data for selected quality indicators. A 59-item list of references is included. (SLD)

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A Research-Based Attribute Structure for School Accountability

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Paper presented at the Annual Meeting of the
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INTRODUCTION

Georgia's State Legislature has mandated periodic evaluation of public schools and school systems throughout the state. As a part of this evaluation, schools are to be classified as "nonstandard, " "standard," or "exemplary." The Center for Educational Research and Evaluation at the University of North Carolina at Greensboro has been contracted to propose standards, indicators of quality, data-collection procedures, and instruments for evaluation of Georgia's public schools. Because pertinent legislation requires that evaluation be comprehensive, in that it address all programs and services provided by Georgia's public schools, it has been necessary to develop standards, indicators, procedures, and instrumentation that could be used to evaluate a multiplicity of school functions and outcomes.

This paper discusses the derivation of a set of standards and indicators for use in mandated school evaluation in Georgia. In developing the indicator system to be used in Georgia, initial consideration was given to assessing process indicators for each school program and service, in addition to indicators of school-wide educational outcomes and school characteristics. Several factors contributed to early revision of this strategy, including considerations of the feasibility of reliable assessment within the legally-mandated constraints of the evaluation, considerations of cost, and of the likely intrusiveness of such assessments into the educational processes of the schools being evaluated. Due to these considerations, the initial concentration on program-by-program evaluation was modified, and formulation of standards and indicators for use in Georgia was focused on school-wide educational outcomes and the characteristics of effective schools. These two foci are conceptually dissimilar, in that educational outcomes deal only with evidence of the effects of education on students, while the characteristics of effective schools include both process factors and outcomes that involve persons other than students. The two foci are also supported by separate and distinct bodies of professional literature. However, the two foci are conceptually similar in that they both deal with school-wide factors that transcend programmatic boundaries.

Organization of this Document

Development of the standards and indicators for use in school evaluation in Georgia next proceeded in two phases. First, a comprehensive list of standards and indicators associated with school quality was formulated through review of the research on school-wide educational indicator systems, and the research literature on the characteristics of effective schools. We were purposefully inclusive in developing this list of standards and indicators. Next, the initial comprehensive list of standards and indicators of school

quality was subjected to an extensive set of review and revision processes, to derive a set of standards and indicators for operational use.

The next section of this paper describes the formulation of the initial, comprehensive list of standards and indicators of school quality. (A synopsis of the review of the professional literature from which these standards and indicators were derived is presented in Appendix A of this paper. The initial, comprehensive list of standards and indicators is presented in Appendix B of this paper.) The second section of this paper describes the revision and review processes used to derive the standards and indicators for operational use. The final section of this paper provides conclusions on major factors to be considered in translating the results of research into standards and indicators for operational use in school evaluation.

DEVELOPMENT OF COMPREHENISVE LIST OF STANDARDS AND INDICATORS OF QUALITY FOR THE EVALUATION OF EDUCATIONAL OUTCOMES AND SCHOOL CHARACTERISTICS

Assumptions

Although the list of standards and indicators of school quality derived at this phase was intended to be inclusive, certain assumptions did underlie the development of the indicator system. The first and most basic assumption is that schools should be held responsible only for factors over which they have some degree of control. Thus, indicators dealing with factors such as funding were not included because schools could not modify such indicators at will.

Other assumptions derive logically from the requirements of the enabling legislation. In particular, the legislation requires that evaluative information not available at the Department of Education be collected on-site in Georgia's schools and school systems by teams composed of education professionals and lay citizens. Teams must be composed of public school staff outside the local unit of administration that is being evaluated, lay citizens who are served by that local unit of administration, and college and university faculty. Administrative and fiscal constraints dictate a limited range of subject-matter specializations among team members. Finally, standards, indicators, procedures, and instrumentation must be sufficiently concrete and prescriptive that they can be used effectively by educators and citizens with a variety of specializations during a time-limited visit to schools and school systems.

Another assumption underlying development of the initial indicator system is the belief that an evaluation should reflect the perspectives and interests of all stakeholders in the system. The primary purpose of a school is to achieve positive effects on students, thus the outcome indicator system developed at this phase was designed to focus on outcomes for all groups of students. Likewise, indicators related to characteristics of effective schools focus on characteristics related to

effectiveness for all groups of students. Karmel (1985), Felter (1989), and others have stressed the importance of assessing educational outcome indicators separately for minorities and females, since these groups have traditionally been less well served by public education systems. Many of the outcome indicators included in the original comprehensive list reflect special consideration for these groups.

Tyler (1983) and others have noted that many educational outcomes are not normally distributed, thus the average or mean score may not be representative of the performance of a majority of students. Also, it is important to examine outcomes for all students, not just the "average" ones. For this reason, it was anticipated that the measures developed for some, if not all, of the outcome indicators would not be limited to average scores, but would also include the proportions above and below certain levels.

The last assumption underlying the development of the initial indicator system concerns the manner in which benchmark criteria would be set for the outcome indicators ultimately chosen. The professional literature does not contain scientifically derived criteria for the level of attainment of the various outcome indicators that readily translate to categories labeled "standard or "exemplary." The literature generally includes an implicit or explicit assumption of "the more, the better." For example, graduation rate is a frequently cited outcome indicator, but the professional literature does not contain scientifically derived rules for what rate is "standard" or what rate is "exemplary." All such distinctions are based upon opinion. Clearly, a dropout rate of 0.0% would be wonderful, but, equally clearly, this is not a reasonable criteria of excellence to which schools should be held. Such criteria should be determined by stakeholders in the evaluation, and should be established in light of information concerning normative values for the state of Georgia and other states, and the criteria used by other states and educational systems. (A process of policy capturing has been proposed for this purpose.)

As stated earlier, the indicator system developed at this phase was intended to be inclusive and to reflect a comprehensive array of indicators. It was recognized that it might ultimately be infeasible to assess some of these indicators due to costs or logistic constraints.

Development of Standards and Indicators of Educational Outcomes

Educational evaluation has been referred to as "high stakes" evaluation by Popham (1975) and others. This designation refers to the fact that the intellectual, emotional, and physical well-being of hundreds or even thousands of learners can be influenced beneficially or adversely because of the results of an educational evaluation. The well-being of teachers and other educational professionals also depends upon evaluation, as does the peace of mind of the public. It is, therefore, imperative that a comprehensive educational evaluation be designed and conducted with the utmost rigor and conceptual clarity. The

ultimate goal of an education system is to effect positive change in learners, thus the measurement of student learning and development, as reflected in outcome indicators, is essential for judging the effectiveness of schools and school systems. Since schools are responsible for promoting student learning and success in many different areas, multiple outcome indicators are needed to provide a comprehensive evaluation of schools' functioning (McMillan, 198?, Oakes, 1986).

The system of indicators chosen for an evaluation is the backbone of the evaluation. Ideally, the indicators will be chosen so that each measures a distinct aspect of the educational system, and taken together they provide information about how the systems' components function to produce overall results. In developing a system of educational indicators, it is essential that the variables chosen reflect the multiple purposes of educational systems (Glickman, 1987; McMillan, 1989; Oakes, 1986; Sirotnik, 1987). Educational evaluations conducted in the past have been criticized for excessive reliance upon standardized test scores as the sole indicator of student performance (cf., Governor's Commission, 1989; Glickman, 1987; McLean, 1989; Tyler, 1983). Professionals charge that this reliance results in a kind of "tunnel vision" which compromises the validity of the evaluation for even a limited range of educational outcomes, and leaves low-performing schools little indication of how to effect improvement, except through drill on the specific variable(s) tested (cf., Cuban, 1983; Frechtling, 1989; Haertel, Haertel & Katzenmeyer, 1989; Worthen & Sanders, 1987). However, standardized test scores, when wisely used, provide useful, reliable, and objective information about student achievement. Tyler (1983) and others have noted that many educational outcomes are not normally distributed, thus the average or mean score may not be representative of the performance of a majority of students. Also, it is important to examine outcomes for all students, not just the "average" ones. For this reason, it was anticipated that the measures developed for some, if not most, of the outcome indicators would not be limited to average scores, but would also include the proportions above and below certain levels.

Haertel, Katzenmeyer, and Haertel (1989) stress that there is no single, accepted model for an educational outcome indicator system. The problem, then, is to formulate a comprehensive system of outcome indicators which will validly reflect the multiple purposes of public education at the school level. The system developed at this phase was intended to reflect an inclusive array of indicators that were judged to be important and amenable to feasible assessment. Karmel (1985), Felter (1989), and others have stressed the importance of assessing educational outcome indicators separately for minorities and females, since these groups have traditionally been less well served by public education systems. In fact, court decisions resulting from litigation charging discriminatory practice, and policy positions designed to protect the interests of minorities and females often *require* that outcomes be assessed separately for these groups (cf., Allen v. Alabama State Board of Education, 1985; Equal Employment Opportunity Commission, Civil Service Commission, Department of Labor & Department of

Justice, 1978; Golden Rule Insurance Company v. Washburn, 1984; Hardigan & Wigdor, 1989; McAllister, 1987). Many of the outcome indicators developed at this phase reflect special consideration for these groups. According to the *Digest of Educational Statistics* (National Center for Educational Statistics, 1989), the student population of Georgia's public schools is approximately 61% white, 38% black, <1% Hispanic, <1% Asian/Pacific Islander, and < 0.05% American Indian, Native Alaskan or Aleut. Although Asian students often perform very differently from other minorities on educational indicators, given the small numbers of non-black minorities in Georgia's schools, it would be infeasible to assess outcomes separately for minorities other than blacks, and grouping all non-whites together would be of questionable validity. For this reason, blacks are only minority for whom separate indicators were proposed at this phase of development.

Recommendations for outcome assessment in the professional literature and the practice of outcome assessment in most educational regulatory systems typically focus on outcome indicators rather than outcome standards. However, the types of indicators recommended or chosen can be used inductively to derive implicit standards. In developing a system of outcome indicators for the Educational Performance Recognition Program in Virginia, McMillan (1989) identified seven broad goals of public education in Virginia: 1) improving school completion rate, 2) preparing students for post-secondary education, 3) preparing students for work, 4) increasing special education student's living skills and opportunities, 5) educating elementary school students, 6) educating middle school students, and 7) educating secondary school students. These seven goals reflect the multiple academic purposes of public education generally cited in the professional literature, and reflect what Herron (1980) refers to as "school skills." However, education has goals for students beyond the purely academic. The professional literature abounds with calls for assessment of such "non-academic" outcomes as students' valuing of the environment, or valuing of cultural diversity (cf., Bowen, 1980; Hargreaves et al., 1989; Herron, 1980; NCA Commission on Schools, 1985; Pace, 1984). Georgia's *Quality Basic Education Act* (Georgia School Laws, 1987, pp. 46-47) also reflects several such goals, including "ensuring that each student is provided ample opportunities to develop competencies necessary for lifelong learning, ...to participate actively in the governing process, to protect the environment,.. and to be an effective worker and responsible citizen." Herron (1980) refers to these as "life skills," stating that they are aimed at preparing students for the multiple life roles which they are likely to encounter in our society. When this category is added to McMillan's (1989) list, the resulting outcome goals for students can be induced from indicators recommended or used in the professional literature.

Thus, the outcome goals of education which served to organize the development of standards and indicators of educational outcomes in this project were:

1) Improving student's school completion rate.

2) Preparing students for post-secondary school life:
   A. Preparing students for continued schooling.
   B. Preparing students for work.
   C. Preparing students for multiple life roles.

3) Providing students with school experiences appropriate to their ages, developmental levels and skill levels:
   A. Educating elementary school students.
   B. Educating middle school students.
   C. Educating secondary school students.
   D. Increasing special education students' living skills and opportunities.

Standards and indicators for each of these outcome goals were developed through review of the pertinent professional literature. To accomplish the comprehensive review of the relevant professional literature upon which the comprehensive outcome indicator system was based, a computerized literature search (ERIC) was conducted. The sources identified in the literature search were augmented by a review of the educational evaluation practices of other states and of professional papers presented at the latest meetings of the American Educational Research Association and the National Council on Measurement in Education. A synopsis of the results of review of the professional literature for each of the outcome goals of education listed above appears in Appendix A of this paper. An integrated summary list of standards and indicators for evaluation of educational outcomes and school characteristics appears in Appendix B of this paper.

Development of Standards and Indicators of School Characteristics

Research grounded in the "effective schools" paradigm has resulted in what Haertel, Katzenmeyer, and Haertel (1989, p. 17) refer to as a "loose consensus on the characteristics of effective schools." These characteristics are not outcomes *per se;* rather they are features of schools which cross subject area boundaries and which have been found to be associated with positive student outcomes, particularly achievement outcomes in math and reading. Ralph and Fennessey (1983, p. 694) describe the results of most studies on the characteristics of effective schools as including "some combination of: 1) strong administrative leadership, 2) a safe and orderly school climate, 3) an emphasis on basic academic skills, 4) high teacher expectations for all students, and 5) a system for monitoring and assessing pupil performance." This is widely referred to as the

"five-factor model." The effective schools perspective has been criticized as being more a rhetoric of reform than a scientific evaluation model (Haertel et al., 1989; Ralph and Fennessey, 1983). The reliability and validity of the measures used to classify schools as more or less effective have been questioned, and the lists of characteristics of effective schools used by different investigators have been criticized as inconsistently defined and poorly justified empirically (Cuban, 1983; Haertel et al., 1989; Purkey and Smith, 1983; Ralph and Fennessey, 1983). Wimpelberg, Teddlie, and Stringfield (1989) note the restricted selection of sites for research on school effectiveness. Many of the studies of so-called "effective schools" are based on detailed case studies of schools which have been identified as effective in producing outcomes, in the absence of corresponding study of ineffective schools; thus, the factors identified as characteristic of effective schools may also be characteristic of many ineffective schools (Gottfredson, 1985; Hallinger and Murphy, 1985; Lewis, 1986; Wynne, 1984).

Several authors agree that the implications for action derived from the effective schools research paradigm are unclear (Cuban, 1983; Haertel et al., 1989; Pugh, 1989). As Haertel et al. (1989, p. 18) state: "Ineffectual principals cannot become strong leaders by a simple act of will, nor can teachers change their expectations overnight. School climate is ...resistant to change by administrative fiat." Even if the distinctive features of effective schools could be determined unambiguously, it does not necessarily follow that other schools could become more effective by emulating them. After administration of an instrument which was carefully developed to measure the degree of "effective school" characteristics present in a school to a state-wide sample of elementary schools, Maruyama, Deno, Cohen, and Espin (1989) found most of the characteristics to have insignificant correlations with reading achievement, and found no correlations greater than 0.27. Despite these criticisms, "effective schools" researchers state that the research literature has repeatedly failed to show any consistent relationships between variations in curriculum, instructional practices, or facilities and student achievement; practices that seem to work in one school do not work in another. They state that this is because characteristics of the learning environment and teachers have a stronger influence on student outcomes than do specifics of the facilities, curriculum, or instructional practices used (Austin, 1979).

It is not possible to delineate cause and effect definitively in educational systems: schools are "loosely coupled systems" (Meyer & Rowan, 1978; Tyler, 1983). The criticisms above are adequate reason to question the wisdom of including only "effective schools" factors in an educational evaluation system, but do not preclude their utility as a part of a comprehensive evaluation system based upon multiple indicators.

Purkey and Smith (1983) completed a critical review of the effective schools literature and derived a set of nine organizational-structure variables and four process variables related to effective schools. This set of variables has

been described as a more coherent model than the list of five factors typically cited in effective schools studies and is considered more appropriate for a comprehensive school evaluation (Haertel et al., 1989). The nine organizational-structure variables identified include: 1) autonomy of school-site management, 2) instructional leadership, 3) staff stability, 4) curriculum articulation and organization, 5) schoolwide staff development, 6) parental involvement and support, 7) schoolwide recognition of academic success, 8) maximized learning time, and 9) district support. The four process variables are: 1) collaborative planning and collegial relationships, 2) sense of community, 3) clear goals and high expectations, and 4) order and discipline. Several of these variables are already assessed through legal compliance monitoring in Georgia. The articulation and organization of the curriculum, (Purkey and Smith, 1983) are addressed by a mandated curriculum in Georgia. Evaluation of schoolwide staff development is similarly mandated. The variable Purkey and Smith identify as *district support* includes consideration of the level and types of financial and other support and guidance provided to the school by the district office. Although these factors undoubtedly affect student outcomes at a school, they are not within the control of the schools. This renders them inappropriate criteria upon which to evaluate the schools (Haertel et al., 1989), thus they will not be developed as educational indicators in this chapter. Excluding the variables considered inappropriate for use in Georgia, the factors cited and described by Purkey and Smith (1983) and by Purkey and Degen (1985) encompass most of the findings of current studies on effective schools.

These factors are:

1. Autonomy of school-site management
2. Instructional leadership
3. Staff stability
4. Parental involvement and support
5. Schoolwide recognition of academic success
6. Maximized learning time
7. Collaborative planning and collegial relationships
8. Sense of community
9. Clear goals and high expectations
10. Order and discipline

Standards and indicators for each of these ten factors were developed through review of the pertinent professional literature. To accomplish the comprehensive review of the relevant professional literature upon which the comprehensive school characteristics indicator system was based, a computerized literature search (ERIC) was conducted. The sources identified in the literature search were augmented by a review of the educational evaluation practices of other states and of professional papers presented at the latest meetings of the American Educational Research Association and the National Council on Measurement in Education. A synopsis of the results of review of the professional literature on each of the factors characteristic of effective schools

listed above appears in Appendix A of this paper. An integrated summary list of standards and indicators for evaluation of educational outcomes and school characteristics appears in Appendix B of this paper.

As stated earlier, the educational outcome and school characteristics indicator system developed at this phase was intended to be inclusive and to reflect a comprehensive array of indicators. It was recognized that it might ultimately be infeasible to assess some of these indicators due to costs or logistic constraints.

REVISION OF STANDARDS AND INDICATORS OF QUALITY FOR THE EVALUATION OF EDUCATIONAL OUTCOMES AND SCHOOL CHARACTERISTICS

As described above, the first phase of the development of standards and indicators for use in school evaluation in Georgia involved compilation of a comprehensive list of educational outcomes and school characteristics. During the second phase of development, this comprehensive list was subjected to an extensive review and revision process, which is described in this section of the paper.

Assumptions

In addition to the assumptions upon which formulation of the initial comprehensive list of standards and indicators was based, some additional assumption formed a basis for the revision of standards and indicators for operation use.

Sirotnik (1987) and others have recognized the effect of "respondent burden" on the quality of information gathered in an educational evaluation. Increasing the volume, frequency, or duration of data collection beyond a certain limit produces an unfavorable impact on the reliability and validity of the information gathered, due to missing data, respondent fatigue and loss of attention, and impairment of the cooperative attitude of respondents. Thus, indicators and measures must be selected to yield the maximum amount of reliable and essential data with the least burden upon respondents at the school level, and with the least disruption of the regular school routine.

Derivation of the revised set of standards and indicators of quality for evaluation of educational outcomes and school characteristics has also been guided by a set of assumptions that derive logically from the requirements of valid and reliable measurement, coupled with feasibility. Specifically, since the student populations served by any single school program are finite and relatively small, estimation of the proportion of students who have a specific opinion, belief, ability, or understanding with any acceptable degree of precision would

require collection of data from virtually every student served by the program. Interviews with only a few randomly selected students cannot validly represent the views of all students. Considerations of cost and time render census interviews or written surveys of all students in a school infeasible; thus standards and indicators which require such student data were eliminated at this phase of development, although such standards and indicators were often considered important by all parties providing feedback on the initial comprehensive of standards and indicators. A parallel argument rendered surveys of parents or members of the community infeasible.

A final assumption concerns the timing of evaluation activities in Georgia schools. Once the Georgia Comprehensive Evaluation System (CES) is fully developed and in place, schools will be visited and reviewed once every five years. An assumption underlying development of the indicator system at this phase is that, when the CES is fully operational, the evaluation review will consider the status of many indicators across the years since the last site visit, rather than limiting consideration to the outcomes of a single year* . This would protect schools from receiving an unduly harsh evaluation because they happen to be reviewed during a year when some outcome is unusually low for them. Considering outcomes across all years since the last site review would also help schools keep an ongoing focus on striving for quality of outcomes and will maximize measurement reliability. During the developmental years of the CES, schools will not have maintained five-year longitudinal records on all relevant student outcomes. Although schools could possibly reconstruct historical records of some, if not all, outcome indicators, this would likely impose an undue hardship upon the schools' administrators and record keeping staff. It was thus anticipated that, during the developmental phases of the CES, evaluations would focus on data from the year(s) since implementation of the Quality Assessment Module of the CES, and data from other years as available.

Methodology

During the this phase of development, the initial comprehensive list of standards and indicators was subjected to extensive review processes. These processes involved repeated iterations incorporating feedback from stakeholders, as well as considerations of validity and reliability of measurement, constraints of the legislative mandate, and considerations of data availability and accessibility, costs, and respondents' preferences for modes of data collection. To accomplish review on these diverse considerations, several distinct review panels were composed:

1. A Technical Advisory Board (TAB) was composed of five nationally prominent experts in educational research methodology and evaluation. This panel convened two to three times a year with the project's professional staff, and conferred frequently by mail and telephone, to provide critical feedback on

* Appendix C presents an example of the method proposed for handling such longitudinal data.

methods for soliciting feedback from relevant stakeholders in the evaluation, alternative methods for measuring proposed indicators of quality, and the balance and adequacy of the indicator system being developed.

2. A Departmental Technical Advisory Board (DTAB) was composed of professionals from the Georgia Department of Education and Georgia State University. Department of Education personnel were chosen to represent several areas within the Department, including the Division of Standards and Evaluation, the Division of Assessment, the Division of Strategic Planning, and the Office of Instructional Programs. This group convened approximately twice a month to review the development of the project and to provide feedback on consistency of products with the legislative mandate, considerations of data availability and accessibility, and likely costs of measurement of proposed indicators. The DTAB also provided essential information on the political context of the evaluation, and any redundancy of proposed standards and indicators with other regulatory or evaluative systems in the state.

3. A Comprehensive Evaluation System Advisory Committee (Advisory Committee) was composed of forty Georgia educators and citizens. This group convened two to three times a year to provide feedback on the availability and accessibility of data, respondent's preferences for modes of data collection, the clarity and meaning of terminology used in standards and indicators to educators and citizens in Georgia, and the political context of the evaluation in local school systems. School systems represented on Advisory Committee also served as pilot- and field-test schools as instruments and procedures for assessing proposed standards of quality were developed.

4. A Steering Committee of the Comprehensive Evaluation System Advisory Committee (Steering Committee) was composed of fifteen members of the Advisory Committee. The Steering Committee convened approximately monthly, and a member of the Steering Committee served on the DTAB (described above). The Steering Committee provided feedback on the availability and accessibility of data, respondent's preferences for modes of data collection, the clarity and meaning of terminology used in standards and indicators to educators and citizens in Georgia, and the political context of the evaluation in local school systems. The Steering Committee worked closely with the project's professional staff and the DTAB to ensure that the standards, indicators, and measurement procedures ultimately developed were acceptable to Georgia educators and citizens.

Each of the groups described above reviewed and reacted to the initial comprehensive list of standards and indicators of educational outcomes and school characteristics. This led to extensive revision of the standards and indicators. As discussed above under the assumptions of this phase of the project, it was judged infeasible to reliably measure indicators which required collection of survey or

interview data from students or parents. These indicators were reluctantly abandoned, despite the fact that they were considered important by all reviewers. Deletion of indicators requiring such data from students also led to the deletion of one entire standard.

Feedback from the DTAB and the Steering Committee led to the rewording of many of the standards and indicators. In some instances, this rewording was necessary to make an indicator applicable to Georgia. For example, Georgia awards a College Preparatory Seal of Endorsement, rather than an Honors Diploma, to students completing a rigorous course of study; thus it was necessary to reword indicators which had initially specified "Honors Diploma." Other wording changes were necessary to make indicators clear and acceptable to educators and the public in Georgia. For example, the phrase "is acceptable" (as in "The graduation rate is acceptable") did not seem inconsistent with sound measurement practice to the project's professional staff or to the TAB, but the Steering Committee strongly felt that the phrase implied that subjective, individualistic judgements would be made on the indicators of quality. For this reason, the wording of the phrase was changed to "meets or exceeds the established level" for most indicators. Similar wording changes were made in many of the standards and indicators of quality.

Although the project's professional staff and the TAB supported assessment of certain indicators separately for minorities, females, and special education students, stakeholder groups found such indicators unacceptable for several reasons. First, the evaluation model being developed called for indicators of school-wide educational outcomes and school characteristics, and these groups felt that such indicators were too limited in scope, and of limited importance. Second, such indicators were judged incompatible with the political context of the evaluation Third, it was judged that measurement of such indicators would substantially increase the respondent burden and cost of data collection, since Georgia schools and the Department of Education do not routinely maintain student data distinguished by race or gender. These considerations led to the deletion of all indicators which addressed outcomes for minorities, females, or special education students.

A number of other types of indicators were eliminated due to being judged of limited importance, and/or infeasible to assess due to considerations of cost and respondent burden. These included indicators involving course enrollment rates, post-secondary activities of students, and feedback from schools to which students matriculated. Indicators involving students' participation in extracurricular activities, math and science fairs, and the arts were judged by the project's professional staff and the TAB to be of questionable validity, since factors besides school quality (such as urban versus rural locations schools) might contribute substantially to variance in these indicators.

Synthesis of the feedback from each of the groups reviewing the initial comprehensive list of standards and indicators led to the formulation of a substantially reduced list of revised standards and indicators of educational outcomes

and school characteristics. As the next phase in the development of the project, data sources and data elements were proposed for each indicator of quality on the revised list. These revised standards and indicators, with proposed data sources and data elements, were then reviewed by each of the groups listed above. This review led to further minor revision of some indicators, and to revision of some proposed data elements and sources.

At this phase in the development of the project, three major data sources for assessing indicators of quality had been identified: 1) data available within the Georgia Department of Education (such as standardized test scores and graduation rates), 2) data which could be gathered from schools through a mailed census questionnaire (such as attendance rates, and rates of suspension and expulsion), and data which would be collected through the mandated on-site visits by the evaluation teams (including data from interviews and written surveys of school personnel, data collected by team members through observations and review of documentary evidence.) To further define the data sources and data elements for many of the indicators of quality, a series of visits to selected schools and systems in Georgia were conducted. At each school, teachers and other school personnel were interviewed regarding the clarity of the wording of indicators which required data on the opinions or experiences of school personnel. They were also asked about any concerns they would have (e.g., confidentiality) in providing information in response to these indicators, and their preferences for modes of data collection (e.g., written survey or interview). School and system personnel were interviewed regarding the availability and accessibility of certain types of numeric data, such as data on rates of staff turnover. After analyses of the results of these school visits, indicators and associated data sources and data elements were again reviewed in light of considerations of respondent burden and respondent's preferred modes of data collection.

The processes of review by each of the groups described above, and subsequent revision, have been followed through each step of the process, including the development and pilot testing of the mailed census questionnaire, and the development of instruments and procedures for school site-visits (which are to be pilot tested this spring). Although the process has been time-consuming and often required the resolution of differences between conflicting values and judgements, we feel it has allowed development of an evaluation system with technical integrity that will ultimately prove acceptable to all relevant stakeholders in the evaluation.

SUMMARY

This paper has described the effort of translating the results of effective schools research, the recommendations of professional councils and bodies regarding school evaluation, and the results of research on educational outcomes, into a system of standards and indicators of educational outcomes and school characteristics for operational use in a state-mandated school evaluation system. This translation process involved repeated iterations incorporating feedback from stakeholders, as well as considerations of validity and reliability of measurement, constraints of the legislative mandate, and considerations of data availability and accessibility, cost, and respondents' preferences for modes of data collection; in an effort to develop an operational system with technical integrity which met the requirements of the law and was acceptable to stakeholders in the evaluation.

From our experiences one may draw several conclusions regarding the major factors which must be considered in developing such a system:

1. Ensure adequate opportunities for obtaining feedback from all relevant stakeholders in the evaluation. Although stakeholder participation is discussed in every elementary evaluation textbook, it cannot be over-emphasized. Stakeholders must have opportunities to participate in each step of the development process. Even though systems like the one we are developing may be legally mandated, their survival and effectiveness depend critically on stakeholder acceptance. Our experience indicates that stakeholder participation is more constructive and productive if it is relatively structured: if stakeholders clearly understand their role in the development of the evaluation system, and know in advance *when* they will be provided opportunities to provide feedback, *what* they will be reviewing at each such opportunity, *how* they are expected to conduct their reviews or otherwise reach conclusions or make recommendations, and what sorts of factors they are expected to consider in conducting reviews, making recommendations, and reaching conclusions.

2. Ensure adequate consideration of the political context of the evaluation. This factor is, of course, inextricably linked with stakeholder participation, and relates similarly to the viability of the evaluation system ultimately developed.

3. Take careful stock of the "respondent burden" which will be imposed by the evaluation system. Sirotnik (1987) and others have recognized the effect of "respondent burden" on the quality of information gathered in an educational evaluation. (Increasing the volume, frequency, or duration of data collection beyond a certain limit produces an unfavorable impact on the reliability and validity of the information gathered, due to missing data, respondent fatigue and loss of attention, and impairment of the cooperative attitude of respondents.) The stakeholders in the evaluation system we are developing also repeatedly remind us of this factor. This is a factor which must be considered at each step in developing an evaluation system.

4. To the greatest extent possible, avoid developing an evaluation system which will inevitably disrupt the entity or process it is intended to evaluate. Stakeholders in the evaluation system we are developing also repeated remind us to develop a system which is minimally intrusive into the school's task of educating students. Indicators and measures must be selected to yield the maximum amount of reliable and essential data with the least burden upon respondents at the school level, and with the least disruption of the regular school routine.

5. Give ongoing considerations to the constraints on the evaluation, including constraints related to cost, personnel, the timeline for development, and the timeframe for implementation.

6. Ensure ongoing assessment of the reliability and validity of the evaluation procedures being developed. Often, conflicting opinions over priorities, values, and judgments arise during development of an evaluation system. Such differences must be reconciled in a manner which does not impair the integrity of the evaluation system. Not only must the reliability and validity of each indicator be monitored, the balance, adequacy, and integrity of the overally system must be continually examined.

APPENDIX A

REVIEW OF LITERATURE ON STANDARDS AND INDICATORS OF QUALITY FOR THE EVALUATION OF EDUCATIONAL OUTCOMES AND SCHOOL CHARACTERISTICS

REVIEW OF LITERATURE ON STANDARDS AND INDICATORS OF QUALITY FOR EDUCATIONAL OUTCOMES

As discussed in the body of this paper, the outcome goals of education which served to organize the development of standards and indicators of educational outcomes for this project were:

1) Improving student's school completion rate.

2) Preparing students for post-secondary school life:
   A. Preparing students for continued schooling.
   B. Preparing students for work.
   C. Preparing students for multiple life roles.

3) Providing students with school experiences appropriate to their ages, developmental levels and skill levels:
   A. Educating elementary school students.
   B. Educating middle school students.
   C. Educating secondary school students.
   D. Increasing special education students' living skills and opportunities.

Standards and indicators for each of these outcome goals were developed through review of the pertinent professional literature. To accomplish the comprehensive review of the relevant professional literature upon which the comprehensive outcome indicator system was based, a computerized literature search (ERIC) was conducted. The sources identified in the literature search were augmented by a review of the educational evaluation practices of other states and of professional papers presented at the latest meetings of the American Educational Research Association and the National Council on Measurement in Education. A synopsis of the results of review of the professional literature on each of the outcome goals of education appears below. An integrated summary list of standards and indicators for evaluation of educational outcomes and school characteristics appears in Appendix B of this paper.

Improving School Completion Rate

Georgia's commitment to improving the graduation rate of its students is evidenced by the fact that efforts "to improve school completion" were a priority focus of the GDE State Strategic Planning Team for 1989 (Rogers, March 1989).

Dropout rates and graduation rates are frequently assessed in state, federal, and local outcome indicator systems (c.f. Blank, 1989; California Department of Education 1989a, 1989b, 1989c; Oakes, 1986; OERI, 1988) or recommended in the professional literature (c.f. Glickman, 1987; Governor's Commission, 1989; NCA Commission on Schools, 1985). Both graduation rate and dropout rate address students' completion of schooling. Students who drop out clearly cannot complete their schooling. Graduation rate, however, is influenced by the dropout rate, the rate of student transfers, and retention rate. Retention may benefit a student's education, transfer may not be detrimental, but dropping out is certainly detrimental. For this reason, both the dropout rate and the graduation rate are used here as indicators. Minority students are often at special risk of failure to complete their education, thus both overall dropout and graduation rates and minority dropout and graduation rates were included as indicators. The state of Virginia, in their *Standards of Quality for Public Schools*, considers both overall dropout rate and minority dropout rate as indicators directed toward improving school completion rate (McMillan, 1989). The Council of Chief State School Officers also includes graduation rates and dropout rates, for all students and for minorities, in its recommended system of educational outcome indicators (Blank, 1989).

Absenteeism is also related to failure to complete school, and is a frequently assessed indicator. However, absenteeism is also a barrier to the broader task of educating students, whether they complete their course of study or not. For this reason, absenteeism is addressed below, in the sections dealing with educating students at all levels, rather than in this section.

Student performance on competency tests is also a frequently assessed outcome indicator (Haertel, Katzenmeyer, & Haertel, 1989). Virginia uses the two-year pass rate (percent of students who pass the test within two years) on a basic competence test required for graduation in Virginia, as an indicator. The Maryland Governor's Commission on School Performance (1989) has also recommended that the percentage of students who pass tenth-grade competency tests be assessed as an outcome in that state's comprehensive educational evaluation system. Over 20 other states collect data on student competency test scores (OERI, 1988). The state of Georgia requires that students achieve a passing score on the Basic Skills Test, initially given in the fall of the tenth grade, in order to graduate. Students may repeat the test if necessary to achieve a passing score. The initial pass rate on the Basic Skills Test was included as an indicator here because it will be simpler to assess and more straightforward to interpret. As minorities typically have lower scores on standardized tests, the minority pass rate on the Basic Skills Test is also included as an indicator. Initial pass rates on the Basic Skills Tests were included in this section because of the likelihood that students who initially fail the test will become discouraged and are at increased risk of dropping out of school.

Low achieving students are at special risk of dropping out, and Tyler (1983) and others have stressed the need to assess the proportion of students who are low achievers, rather than just average scores, when considering student outcomes.

Virginia considers the percent of students scoring in the lowest quartile of the ITBS (Iowa Tests of Basic Skills) or TAP (Tests of Achievement and Proficiency) (depending on grade) as an indicator related to school completion. Georgia also uses the ITBS and TAP, and these indicators were included. Because minorities typically have lower scores on standardized tests, the percent of minorities scoring in the lowest quartile of the ITBS or TAP (depending on grade) is also included as an indicator.

Preparing Students for Post-Secondary School Life

Preparing Students for Continued Schooling

Preparation for college is facilitated by completion of a particularly rigorous course of study in high school. The Governor's Commission on School Performance (1989) has recommended use of the percentage of students who complete a rigorous high school program, as indicated by the Advanced Studies or Honors diploma, as an outcome indicator in Maryland's comprehensive educational evaluation system. The state of Virginia also uses the percent of high school graduates receiving the Advanced Studies Diploma as an indicator to be used in assessing whether a school is adequately preparing students for college (McMillan, 1989). The percent of students, and of minorities, receiving an Honors Diploma was included as an indicator of whether a secondary school is adequately preparing students for college.

Scores on the Scholastic Aptitude Test (SAT) or the American College Test (ACT) are also frequently used as indicators (c.f. Haertel, Haertel & Katzenmeyer, 1989; OERI State Accountability Study Group, 1988). The state of Virginia uses the percent of 11th and 12th graders taking the SAT, and the percent of 11th and 12th grade minorities taking the SAT, as indicators to be used in assessing whether a school is adequately preparing students for college (McMillan, 1989). The percent of all students, and minorities, taking the SAT or ACT, as well as the average scores of all students and minorities on these tests, were included here as outcome indicators for secondary schools.

The Office of Educational Research and Improvement (OERI) (1988) recommends collecting data on the percentage of students who meet the state's university entrance requirements as an educational outcome indicator. This was included as a secondary school indicator, both for all students and for minorities. The proportion of graduating secondary school students who qualify for scholarships and awards also presents evidence of how well a secondary school has prepared students for college, and was included as an indicator.

Patterns of course enrollment provide evidence of the adequacy of both secondary schools' and middle schools' preparation of their students for college. Rates of enrollment in advanced math, science and foreign language courses are

frequently assessed outcome indicators, and clearly relate to preparation for college (c.f. Haertel, Haertel & Katzenmeyer, 1989; OERI State Accountability Study Group, 1988). The state of Virginia uses the following indicators in assessing whether a school is adequately preparing students for college: the percent of 8th graders taking a foreign language, the percent of 8th graders taking algebra, and the percent of secondary school students taking one or more advanced placement or college level courses (McMillan, 1989). The Council of Chief State School Officers includes advanced course enrollment rates, for all students and for minorities, in its recommended system of educational outcome indicators (Blank, 1989). The California Department of Education (1989a, 1989b, 1989c) and the Greensboro Public School System (1989) include assessment of enrollment patterns by race and gender in advanced courses in their system of quality indicators. Since foreign language and algebra are typically offered in middle schools, rates of enrollment in these courses were included as indicators of the degree to which middle schools are preparing students for college. Enrollment rates in advanced placement courses, foreign language courses, and advanced science and mathematics courses were included as indicators for secondary schools. Females are historically underrepresented in science and mathematics courses, thus rates are considered separately for females as well as minorities for these courses.

Standardized norm- and criterion-referenced achievement test results are the most widely used student outcome indicator, used in virtually every state, federal and local educational indicator system . Above-average achievement is a necessary foundation for college, and is an indicator available at every grade level. The state of Virginia uses the percent of students scoring in the upper quartile of the ITBS or the TAP (depending on grade) as an indicator to assess whether a school is adequately preparing students for college (McMillan, 1989). Georgia also uses the ITBS and TAP. The proportion of all students, and minorities, scoring in the upper quartile of these norm referenced tests was included as indicators.

The Governor's Commission on School Performance (1989) has also recommended use of the post-secondary attainment of graduates of Maryland high schools as an outcome indicator in Maryland's comprehensive educational evaluation system. Bowen (1980) and the NCA Commission on Schools (1985) have also stressed the need to include assessment of outcomes concerning post-graduation status of school alumni. The North Carolina State Board of Education (1989) includes assessment of post-graduation status in its educational indicator system, and over a third of the states collect some data on post-graduation status (OERI, 1988). The state of Virginia includes scrutiny of the percent of graduates who attend a two- or four-year college the year subsequent to graduation in assessing whether a school is adequately preparing students for college (McMillan, 1989). The Council of Chief State School Officers includes post-secondary school status, for all students and for minorities, in its recommended system of educational outcome indicators (Blank, 1989). The percent of graduates, and minority graduates, who subsequently attend college were included as outcome indicators.

Preparing Students for Work

Although preparing students for work is an important and widely recognized function of schools, outcome indicators relating specifically to this function are only beginning to be addressed in the professional literature. The state of Virginia uses the following indicators to assess the degree to which schools adequately prepare students for work: the percent of vocational education students completing their vocational education program, the percent of minority vocational education students completing their vocational education program, the graduation rate of vocational education students, the percent of 12th-graders who have taken a vocational aptitude test or interest inventory at some time, and the percent of graduating students who do not attend post-secondary education who are employed after graduation (McMillan, 1989). The graduation rate of minority vocational education students was included as an indicator, at the request of members of the CES State Advisory Board.

Both the North Carolina State Board of Education (1989) and the Governor's Commission on School Performance (1989) have recommended data on the post-secondary activities of graduates of the states' secondary schools as outcomes in their comprehensive educational evaluation systems. Bowen (1980) and the NCA Commission on Schools (1985) stressed the need to include assessment of outcomes concerning post-graduation status of school alumni, of students, and The Council of Chief State School Officers included assessment of post secondary school status, for all students and for minorities, in its recommended system of educational outcome indicators (Blank, 1989). Indicators related to rates of post-graduation employment should, of course, be adjusted for local labor market conditions, as reported by local state employment service offices. The percent of students completing vocational education programs was included as an indicator for high schools.

Preparing Students for Multiple Life Roles

Britell (1980) stresses the importance of assessing whether students have acquired the skills required in order to function as citizens in the society in which they live when evaluating educational outcomes. In order to function in a technologically advanced society committed to a democratic government, students must examine alternatives and make decisions. Similarly, Herron (1980) stresses the importance of assessing whether students are being adequately prepared to cope with the various life roles with which they will likely be faced--the roles of learner, producer, individual, citizen, consumer, and family member. Herron refers to these as "life skills," and states that they require more than the mere acquisition of knowledge. They also transcend subject area boundaries. The state of Georgia has a strong commitment to student outcome goals which reflect a focus on the multiple life roles of citizens in this society, as demonstrated in its adopted *Quality Basic Education Act* (Georgia School Laws, 1987, pp. 46-47). The *Quality Basic Education Act* includes the following "life

skills" goals: The student will be provided ample opportunity to develop the competencies necessary to: 1) recognize the need for lifelong learning, 2) participate actively in the governing process and community activities, 3) protect the environment and conserve public and private resources, 4) seek to maintain sound physical and mental health, and 5) be an effective worker and responsible citizen. These goals clearly reflect a focus on preparing students to function in the roles of learner, producer, individual, citizen, consumer, and family member, as delineated by Herron (1980). Bowen (1980) has called for assessment of students' aesthetic sensibility, practical competence in citizenship and family life, and their emotional and moral development, when evaluating the outcomes of educational programs. Similarly, Pace (1984) has called for assessment of students' appreciation of the arts, citizenship, responsibility, and tolerance of and appreciation of other cultures. The state of Virginia has demonstrated a commitment to such goals, and is considering including assessment of outcome indicators of student's self-concept, attitudes toward school and learning, citizenship, valuing of cultural diversity, and knowledge and appreciation of the arts, in its comprehensive evaluation system. Maryland's Governor's Commission on School Performance (1989) and the NCA Commission on Schools (1985) have advocated the inclusion of indicators of students' appreciation of the arts, appreciation of cultural diversity, sense of responsibility to others, self concepts, attitudes toward learning, and understanding of the workings of the country's political system in comprehensive educational evaluation systems. The Virginia system also includes assessment of students' physical fitness (McMillan, 1989) as does the Dade County, Florida school recognition program (Haertel, Katzenmeyer, and Haertel, 1989) and the California system (1989a, 1989b, 1989c). Although the educational outcomes listed above were universally considered important by all reviewers, they are very difficult to measure reliably and validly, and would require extensive data collection from students.

PROVIDING STUDENTS WITH SCHOOL EXPERIENCES APPROPRIATE TO THEIR AGES, DEVELOPMENTAL LEVELS, AND SKILL LEVELS

Educating Elementary, Middle, and Secondary Students

Standardized norm- and criterion-referenced achievement test results are the most widely used student outcome indicators in virtually every state, federal, and local educational indicator system (cf., Governor's Commission on School Performance, 1989; Haertel, Haertel & Katzenmeyer, 1989; Oakes, 1986; OERI State Accountability Study Group, 1988). They are widely recognized as having the advantage of being reliable and objective. Georgia has in place a system of statewide student assessment which uses both criterion-referenced tests (CRTs), developed in Georgia and directed toward specific learning objectives that Georgia educators have agreed are essential for students' academic progress and success, and norm-referenced tests (NRTs). Two of the CRTs provide pass-fail scores: students must pass the third-grade CRT in order to be promoted to the

fourth-grade, and students must pass the Basic Skills Test, given initially in the tenth-grade, in order to receive a high school diploma. CRTs are given in grades 1, 3, 6, 8, and 10. There are also optional CRTs in grades 2 and 4. The NRTs used are the Iowa Tests of Basic Skills (ITBS) in grades 2, 4, and 7, and the Tests of Achievement and Proficiency (TAP) in grade 9 (GDE, 1988). Non-Asian minority students have achieved lower scores on standardized tests than non-minority students. The Council of Chief State School Officers includes assessment of achievement outcomes for all students, and for minorities, in its recommended system of educational outcome indicators (Blank, 1989). Achievement test scores for all students, and for minorities, are thus included as indicators of the degree to which the schools are educating elementary, middle, and secondary students.

Students must be present in a school in order for the school to educate them, thus attendance is related both to school completion, as discussed above, and to the basic task of educating students. Student attendance or absenteeism rate is frequently assessed as an outcome indicator (cf., California Department of Education, 1989a, 1989b, 1989c; Gottfredson, 1985; North Carolina, 1989; OERI State Accountability Study Group, 1988) or recommended as an indicator (Governor's Commission, 1989; Haertel, Katzenmeyer, & Haertel, 1989; NCA Commission on Schools, 1985). Both overall student absenteeism, and minority absenteeism, were included as indicators for elementary, middle, and secondary schools.

Student learning is also related to student discipline, thus rates of student suspension and expulsions are proposed as outcome indicators (Haertel, Katzenmeyer, and Haertel, 1989). The Greensboro Public School System (1989) has proposed inclusion of suspension and retention rates in its quality indicator system. Rates of suspension, expulsion, and retention overall, and for minority students, were included as indicators for elementary, middle, and secondary schools.

At the request of reviewers in the Georgia Department of Education, the following indicators are also included: rates of student participation in math fairs and tournaments; rates of student enrollment and completion of Algebra I, Algebra II, and Geometry; and the percent of students nominated for, and selected for, the Governor's Honor's Program.

Educating Elementary Students

The state of Virginia (McMillan, 1989) uses performance on the ITBS, student absenteeism, and percent of students passing the Literacy Passport (a 5th-grade competency test in Virginia) as indicators of the degree to which schools are educating elementary students. The Governor's Commission on School Performance (1989) has also recommended that the percentage of students who pass competency tests be used as outcomes in Maryland's comprehensive educational evaluation system. Georgia has a competency test administered in the third-grade, hence the pass rate on this test, along with performance on the NRTs and CRTs, and

student absenteeism, was included in the educational indicators. The OERI (1988) also recommends consideration of student participation in arts and extracurricular activities in educational indicator systems.

The middle schools to which elementary students matriculate can also provide feedback on the adequacy of the preparation of the students for middle school level work. This feedback is also included as an indicator of the effectiveness of elementary schools in educating students.

Educating Middle School Students

The state of Virginia (McMillan, 1989) uses performance on the ITBS and TAP, student absenteeism, percent of students passing the Literacy Passport (an 8th-grade competency test in Virginia), and percent of students who have participated in at least one school sponsored extracurricular activity during the year as indicators of the degree to which schools are educating middle school students. The OERI (1988) also recommends consideration of student participation in arts and extracurricular activities in educational indicator systems. These indicators were included for all students and for minority students.

The high schools to which middle-school students matriculate can also provide feedback on the adequacy of preparation of students for high-school level work. This feedback is also included as an indicator of the effectiveness of elementary schools in educating students.

Educating Secondary School Students

The state of Virginia (McMillan, 1989) uses performance on the TAP, student absenteeism, percent of students who have taken keyboarding or typing, and percent of students who have participated in at least one school-sponsored extracurricular activity during the year as indicators of the degree to which schools are educating secondary school students. The percent of students who have taken keyboarding is not included as an indicator, as it is an indicator of very limited and specific educational outcomes. The percent of students who passed the CRT in the tenth grade was considered above, as an indicator related to school completion; here, average scores will be considered. The OERI (1988) also recommends consideration of student participation in arts and extracurricular activities in educational indicator systems. These indicators were included for all students, and minority students.

Increasing Special Education Students' Living Skills & Opportunities

Fewell and Vadasy (1987) stress the importance of specifically assessing the extent to which educational programs enhance the quality of life for special educational students and their families. The state of Virginia (McMillan, 1989)

uses the following indicators to assess the degree to which schools adequately contributed to Special Education Students' Living Skills & Opportunities: attendance and dropout rate of special education students, percent of handicapped students receiving an Honors Diploma, percent of handicapped students attempting competency tests, percent of handicapped students passing competency tests, percent of handicapped students taking standardized tests, and rate of employment (or further education) of special education students after graduation. Evans and Brown (1986) suggest that tests of specific living skills, such as the ability to ties one's shoes or dial a telephone, tailored to individual students' Individualized Educational Plans, be used as outcome indicators to assess the effectiveness of programs for special education students. However, this seems infeasible in a state-wide testing program, and thus was not included here.

REVIEW OF LITERATURE ON STANDARDS AND INDICATORS OF QUALITY FOR CHARACTERISTICS OF EFFECTIVE SCHOOLS

As described in the body of this paper, the factors cited and described by Purkey and Smith (1983) and by Purkey and Degen (1985) encompass most of the findings of current studies on effective schools, and were used to organize development of standards and indicators of school characteristics for this project.

These factors are:

1. Autonomy of school-site management
2. Instructional leadership
3. Staff stability
4. Parental involvement and support
5. Schoolwide recognition of academic success
6. Maximized learning time
7. Collaborative planning and collegial relationships
8. Sense of community
9. Clear goals and high expectations
10. Order and discipline

Standards and indicators for each of these ten factors were developed through review of the pertinent professional literature. To accomplish the comprehensive review of the relevant professional literature upon which the comprehensive school characteristics indicator system was based, a computerized literature search (ERIC) was conducted. The sources identified in the literature search were augmented by a review of the educational evaluation practices of other states and of professional papers presented at the latest meetings of the American Educational Research Association and the National Council on Measurement in Education. A synopsis of the results of review of the professional literature on each of the factors characteristic of effective schools listed above appears below. An integrated summary list of standards and

indicators for evaluation of educational outcomes and school characteristics appears in Appendix B of this paper.

Autonomy of School-Site Management

A number of studies indicate that effective schools are characterized by a considerable degree of autonomy of administrators and teachers in determining the exact means by which they will address school and student needs and problems. Purkey and Smith (1983) refer to this as *autonomy of school-site management* and view it as essential to the development of a school-specific culture. Based upon review of the professional literature, Austin (1979) also concluded that a sense of autonomy on the part of the principal was important to school effectiveness and that teachers feeling free to choose techniques and try new things was important to school effectiveness. The California Department of Education (1989a, 1989b, 1989c) includes assessment of the degree to which teachers feel encouraged to try new approaches or innovations in its Quality Review of schools. The Minnesota State Department of Education (Maruyama et al., 1989) also includes assessment of the autonomy of school site management and support for teaching innovations in its Minnesota Educational Effectiveness Project.

Instructional Leadership

Strong leadership has repeatedly been found to be associated with school effectiveness and is thought to be necessary to initiate and maintain the improvement process. Most studies find this leadership to be by the principal, although Purkey and Smith (1983) state that groups of teachers or other administrators could also provide leadership to the school. Based upon review of the professional literature, Austin (1979) and Lewis (1986) also concluded that the leadership of the principal was central to school effectiveness. Specifically, it was important for principals to exert power based upon educational expertise (not administrative expertise or other sources of power) and to be viewed by teachers and students as expert in a wide variety of areas pertaining to education (High and Achilles, 1986). Edmonds (1979) also reviewed the research literature on effective schools and concurred with the centrality of strong leadership on the part of the principal. Assessment of the leadership of the principal in comprehensive school evaluations was advocated by Sirotnik (1987) and by Bamburg and Andrews (1989).

Staff Stability

Sirotnik (1987) advocated the assessment of the stability of teachers and of the principalship in comprehensive school evaluations. Purkey and Smith (1983, 1985) cite several studies which indicate that a stable staff appears necessary to promote and maintain success and that frequent staff turnovers are likely to

retard growth and impede change. Turnover rates for the principal and for teachers were included as indicators.

Parental Involvement and Support

The evidence concerning the importance of parental involvement in schools appears mixed, with only a few studies finding it to be a major factor in student achievement (Wimpelberg et al., 1989). Purkey and Smith (1983, 1985) conclude that evidence supports the need for parents to be informed of school goals and student responsibilities, especially with regard to homework, discipline, and attendance. Based upon their reviews of the professional literature, Austin (1979) and Lewis (1986) concluded that positive parent-teacher relationships were important to school effectiveness. Parental involvement in decision making was suggested by Purkey and Degen (1985) as a means to foster parental support.

In a state-wide empirical study in Minnesota, Maruyama, et al. (1989) found parental support and involvement to be the "effectiveness" characteristic most highly correlated with elementary reading achievement. In a study of 16 effective schools in the Chicago area, Wynne (1984) also found frequent communication with parents and parental involvement to be characteristic of these schools. Georgia's commitment to parental involvement is evidenced by the fact that efforts "to improve parent involvement" were a priority focus of the GDE State Strategic Planning Team for 1989 (Rogers, 1989, March). The California Department of Education (1989a, 1989b, 1989c) includes assessment of parental support and involvement in its Quality Review of schools, as does the Minnesota State Department of Education (Maruyama et al., 1989) in its Minnesota Educational Effectiveness Project. In particular, the Quality Review in California includes assessment of the degree to which parents are kept informed of the progress of their children, students' homework responsibilities, school rules and goals, and special activities of the schools, as well as the degree to which parents have regular opportunities to share their expectations regarding school programs. The Greensboro Public School System (1989) has proposed inclusion of parental PTA membership and attendance rates in its quality indicator system.

Schoolwide Recognition of Academic Success

Purkey and Smith (1983, p. 444) state: "A school's culture is partially reflected in its ceremonies, its symbols, and the accomplishments that it chooses to recognize officially. Schools that make a point of publicly honoring academic achievement and stressing its importance through the appropriate use of symbols, ceremonies and the like encourage students to adopt similar norms and values." They cite several studies supporting this conclusion. The California

Department of Education (1989a, 1989b, 1989c) includes assessment of the degree to which students are recognized for good work in its Quality Review of schools.

Maximized Learning Time

In characterizing the factor which they refer to as *maximized learning time,* Purkey and Smith (1983) include some characteristics which address how instruction in an individual classroom is organized and managed. Such considerations are addressed in other chapters of this volume which concern evaluation of specific academic programs. However, Purkey and Smith also include some considerations that cross classroom or subject-area boundaries, indicating that the school environment as a whole is managed so that instructional time is maximized. They conclude that research supports the importance of class periods being free from interruptions by loudspeaker, messages from the counseling office, or disruptions from the hall or yard outside. The NCA Commission on Schools (1985) also advocates assessment of maximization of engaged learning time. The California Department of Education (1989a, 1989b, 1989c) includes assessment of the degree to which the school environment is arranged to maximize learning time in its Quality Review of schools. In particular, the Quality Review in California includes assessment of whether announcements and disruptions interrupt class, and whether teachers begin instruction punctually and utilize the entire instructional period.

Collaborative Planning and Collegial Relationships

Eight studies which support the association of positive student outcomes with collegiality among teachers and administrators are cited by Purkey and Smith (1983), suggesting that a collegial atmosphere exerts a positive influence in several ways. It breaks down barriers between departments and between teachers and administrators, encourages intellectual sharing and consensus, promotes a feeling of unity among the staff, and allows the staff to work together. These studies also report the related finding that teachers and administrators working together is associated with positive student outcomes. Austin (1979) and Lewis (1986) also concluded that mutual respect, collegial relations, and collaborative work among teachers were important to school effectiveness. Maruyama et al. (1989) found collegiality to be weakly correlated with elementary reading achievement. Georgia's commitment to providing a supportive work climate to its teachers is evidenced by the fact that efforts "to improve work climate" for teachers was a priority focus of the GDE State Strategic Planning Team for 1989 (Rogers, 1989, March). The NCA Commission on Schools (1985) advocates assessment of faculty perceptions of trust, security, and respect. The California Department of Education (1989a, 1989b, 1989c) includes assessment of the degree to which staff members work cooperatively, the degree of respect among staff, and the degree to which teachers are recognized for good work in its Quality

Review of schools. The Minnesota State Department of Education (Maruyama, et al., 1989) includes assessment of the collegiality of the work atmosphere in its Minnesota Educational Effectiveness Project.

Sense of Community

Purkey and Smith (1983, p. 445) cite two studies in support of the conclusion that: "There is persuasive evidence that community feeling, the sense of being a recognizable member of a community that is supportive and clearly perceived (by the staff and others), contributes to reduced alienation and increased achievement. There is also evidence that schools can create or build community by the appropriate use of ceremony, symbols, rules (i.e. dress code) and the like." Austin (1979) and Lewis (1986) also concluded that having teachers who were perceived as warm and responsive by students was important to school effectiveness. A similar, but less well defined construct, "school climate," is widely cited as associated with school effectiveness (Kelley, 1981; Sagor, 1981; Sirotnik, 1987). In a multivariate analysis using data from 55,000 students collected over a three-day evaluation of instruction, Cranton (1982) found the factor of school atmosphere to be the strongest predictor of student success. Maruyama et al. (1989) found school climate to be weakly correlated with elementary reading achievement. The NCA Commission on Schools (1985) advocates assessment of student and faculty perceptions of morale, trust, security, and respect. The California Department of Education (1989a, 1989b, 1989c) includes assessment of school climate in its Quality Review of schools. In particular, the Quality Review in California includes assessment of whether students feel the school environment is safe and supportive. The Minnesota State Department of Education (Maruyama, et al., 1989) includes assessment of the school climate in its Minnesota Educational Effectiveness Project, in particular whether the climate supports academic achievement for all students.

Clear Goals and High Expectations

Twelve studies supporting the conclusion that effective schools are characterized by clearly defined goals for students and high expectations for student achievement on the part of both students and staff are cited by Purkey and Smith (1983). They suggest that clearly defined goals help reduce student alienation, which they view as a common barrier to school effectiveness. Austin (1979) also concluded that high staff expectations for student performance were important to school effectiveness, as were positive self-concepts on the part of students. Edmonds (1979) and Lewis (1986) also reviewed the research literature on effective schools and concurred that high expectations for student performance were important to school effectiveness. Edmonds further concluded that school effectiveness was associated with teachers holding the belief that they could promote achievement even for disadvantaged children, rather than viewing the home and environmental influences in students' lives as insurmountable. Sirotnik (1987) also advocated assessment of teachers'

expectations for students in comprehensive school evaluations. The NCA Commission on Schools (1985) advocates assessment of the clarity of expectations for students. The California Department of Education (1989a, 1989b, 1989c) includes assessment of the clarity of goals, the degree to which teachers feel responsible for student learning, and the degree of high expectations for students in its Quality Review of schools. The expectation that all students complete all homework assignments, and that these are reviewed and returned in a timely manner, is used as an indicator in the California system. The Minnesota State Department of Education (Maruyama, et al., 1989) includes assessment of high expectations and the clarity of goals in its Minnesota Educational Effectiveness Project. At the request of reviewers in the Georgia Department of Education, the fact that course grading reflects only academic performance (rather than discipline or behavior) was included as an indicator in this section, as well as the percent of mathematics teachers who are certified to teach mathematics.

Order and Discipline

The existence of clear, reasonable rules that are fairly and consistently enforced can reduce behavior problems, which are often a barrier to learning; students cannot learn in an environment that is noisy, distracting or unsafe. Purkey and Smith (1983) cite a number of studies that suggest the importance of order and discipline for student achievement. The California Department of Education (1989a, 1989b, 1989c) includes assessment of the extent to which students feel safe, the consistency of enforcement of school rules, and the cleanliness and orderliness of the school environment in its Quality Review of schools. The Greensboro Public School System (1989) has proposed inclusion of the frequency of incidence of drug abuse in its quality indicator system. The Minnesota State Department of Education (Maruyama, et al., 1989) includes assessment of discipline and order in its Minnesota Educational Effectiveness Project.

APPENDIX B

COMPREHENISVE LIST OF STANDARDS AND INDICATORS OF QUALITY FOR THE EVALUATION OF EDUCATIONAL OUTCOMES AND SCHOOL CHARACTERISTICS

An integrated summary list of standards and indicators for evaluation of school-based educational outcomes and school characteristics follows. Standards 1 through 8 address educational outcomes, while Standards 9 through 18 address school characteristics.

Educational Outcomes

Improving School Completion Rate

Standard 1: Students have acceptable rates of completion of their courses of study.

a. The **overall dropout rate** (percent of students not returning to any school in the fall or who do not complete the year) is acceptable.
b. The **minority dropout rate** (percent of minorities not returning to any school in the fall or who do not complete the year) is acceptable.
c. The **overall graduation rate** is acceptable.
d. The **minority graduation rate** is acceptable.
e. The percent of students passing the **Georgia Basic Skills Test** on first attempt (in the tenth grade) is acceptable.
f. The percent of **minorities** passing the **Georgia Basic Skills Test** on first attempt (in the tenth grade) is acceptable.
g. The percent of students scoring in the **lowest quartile of the ITBS or TAP** (depending on grade) is acceptable.
h. The percent of **minorities** scoring in the **lowest quartile of the ITBS or TAP** (depending on grade) is acceptable.

Preparing students for post-secondary school life:

Standard 2: The school contributes adequately to preparing students for continued schooling.

a. The percent of students at the school receiving the **Honors Diploma** is acceptable. (for secondary schools)

b. The percent of **minorities** at the school receiving the **Honors Diploma** is acceptable. (for secondary schools)

c. The percent of 11th and 12th grade students **taking the SAT or ACT** is acceptable. (for secondary schools)

d. The percent of 11th and 12th grade **minorities taking the SAT or ACT** is acceptable. (for secondary schools)

e. Students' **scores on the SAT and ACT** are acceptable. (for secondary schools)

f. **Minorities' scores on the SAT and ACT** are acceptable. (for secondary schools)

g. The percentage of students who **meet state university entrance requirements** is acceptable. (for secondary schools)

h. The percentage of **minorities** who **meet state university entrance requirements** is acceptable. (for secondary schools)

i. The number of National Merit **Scholarship** qualifiers, semi-finalists, and finalists, or students who qualify for other scholarships or awards based on aptitude, is acceptable. (for secondary schools)

j. The percent of students **taking advanced placement or college level courses** is acceptable. (for secondary schools)

k. The percent of **minorities taking advanced placement or college level courses** is acceptable. (for secondary schools)

l. The **enrollment rate in advanced mathematics courses** is acceptable. (for secondary schools).

m. The **enrollment rate of minorities in advanced mathematics courses** is acceptable. (for secondary schools)

o. The **enrollment rate of females in advanced mathematics courses** is acceptable. (for secondary schools)

p. The **enrollment rate in advanced science courses** is acceptable. (for secondary schools)

q. The **enrollment rate of minorities in advanced science courses** is acceptable. (for secondary schools)
r. The **enrollment rate of females in advanced science courses** is acceptable. (for secondary schools)
s. The **enrollment rate in foreign language** courses is acceptable. (for secondary and middle schools)
t. The **minority enrollment rate in foreign language** courses is acceptable. (for secondary and middle schools)
u. The **percent of students taking algebra** is acceptable. (for middle schools)
v. Percent of **minority students taking algebra** is acceptable. (for middle schools)
w. The percent of **female students taking algebra** is acceptable. (for middle schools)
x. The percent of students scoring in the **upper quartile of the ITBS or TAP** (depending on grade) is acceptable. (for all schools)
y. The percent of **minorities** scoring in the **upper quartile of the ITBS or TAP** (depending on grade) is acceptable. (for all schools)
z. The percent of graduates who subsequently **attend college** is acceptable. (for secondary schools)
aa. The percent of **minority** graduates who subsequently **attend college** is acceptable. (for secondary schools)

Standard 3: The school contributes adequately to preparing students for work.

a. The percent of vocational education students who **complete their vocational education program** is acceptable. (for middle and secondary schools)
b. The percent of **minority vocational education students who complete** their vocational education program is acceptable. (for middle and secondary schools)
c. The **graduation rate of vocational education students** is acceptable. (for secondary schools)
d. The percent of students who have taken a **vocational aptitude test or interest inventory** is acceptable. (for middle and secondary schools)

e. The percent of vocational education students **competing for district, regional, state and national awards** is acceptable. (middle & secondary schools)
f. The percent of graduating students not attending college who are **employed** full time in an area related to their preparation or are in the military within one year of graduation is acceptable, (using adjustment for local labor market conditions). (secondary schools)
g. The percent of graduating **minorities** not attending college who are **employed** full time in an area related to their preparation or are in the military within one year of graduation is acceptable , (using adjustment for local labor market conditions). (secondary schools)

Providing students with school experiences appropriate to their ages, developmental levels and skill levels:*

Standard 4: The school contributes to increasing special education students' living skills and opportunities.

Indicators:

a. The **attendance rate of special education students** is acceptable.
b. The **dropout rate of special education students** is acceptable.
c. The percent of students with hearing, speech, visual or orthopedic impairments, or learning disabilities who receive **Honors Diplomas** is acceptable.
d. The percent of special education students who **attempt** the **third-grade competency test** is acceptable.
e. The percent of special education students who **pass** the **third-grade competency test** is acceptable.
f. The percent of special education students who **attempt** the **tenth-grade competency test** is acceptable.
g. The percent of special education students who **pass** the **tenth-grade competency test** is acceptable.

* Standards 4, 5, 6 & 7 were subsequently combined into a single standard: "The school effectively educates students in the grade-levels it serves."

h. The percent of special education students **taking the ITBS or TAP** (depending on grade) is acceptable.

i. Of special education students who take the tests, the **performance** of special education students **on the ITBS or TAP** (depending on grade) is acceptable.

j. The percent of special education students who are **employed** (or enrolled in further education) after graduation is acceptable.

k. The average percent of students' **IEP annual goals** which are **met** by the end of the year is at or above the established level.

l. The degree of movement of students to a **less restrictive academic environment** (e.g. the increase in percent of time spent in a regular classroom) is at or above the established level.

Standard 5: The school adequately educates elementary school students. (Applies to elementary schools only).

Indicators:

a. Student **performance on the ITBS** in grades 2 and 4 is acceptable.

b. **Minority performance on the ITBS** in grades 2 and 4 is acceptable.

c. Student **performance on the CRT** in grades 1, 3, and 6 is acceptable.

d. **Minority performance on the CRT** in grades 1, 3, and 6 is acceptable.

e. Percent of students **passing third-grade CRT** is acceptable.

f. Percent of **minority students passing third-grade CRT** is acceptable.

g. The student **absenteeism** rate is acceptable.

h. The **minority absenteeism** rate is acceptable.

i. The **teacher absenteeism** rate is acceptable.

j. The **out-of-school suspension rate** is acceptable.

l. The **out-of-school suspension rate** for **minorities** is acceptable.

m. The **in-school suspension rate** is acceptable.

n. The **in-school suspension rate for minorities** is acceptable.

o. The **expulsion rate** is acceptable.

p. The **expulsion rate for minorities** is acceptable.

q. The student **retention-in-grade rate** is acceptable.

r. The **minority retention-in-grade rate** is acceptable.

s. **Feedback from the middle school(s)** to which the students matriculate indicates that students are adequately prepared.

t. Rates of **student participation** in the arts and extracurricular activities is acceptable.

Standard 6: The school adequately educates middle school students. (Applies to middle schools only).

Indicators:

a. Student **performance on the ITBS** in grade 7 and the **TAP** in grade 9 is acceptable.

b. **Minority performance on the ITBS** in grade 7 and the **TAP** in grade 9 is acceptable.

c. Student **performance on the CRT** in grade 8 is acceptable.

d. **Minority performance on the CRT** in grade 8 is acceptable.

e. The **student absenteeism rate** is acceptable.

f. The **minority absenteeism rate** is acceptable.

g. The **teacher absenteeism rate** is acceptable.

h. The student **retention-in-grade rate** is acceptable.

i. The **minority retention-in-grade rate** is acceptable.

j. The **expulsion rate** is acceptable.

k. The **minority expulsion rate** is acceptable.

l. The **out-of-school suspension rate** is acceptable.

m. The **out-of-school suspension rate** for **minorities** is acceptable.

n. The **in-school suspension rate** is acceptable.

o. The **in-school suspension rate for minorities** is acceptable.

p. **Feedback from the secondary school(s)** to which the students matriculate indicates that students are adequately prepared.

q. Rates of **student participation** in the arts and extracurricular activities is acceptable.

Standard 7. The school adequately educates secondary school students. (Applies to secondary schools only).

a. Student **performance on the CRT** in grade 10 is acceptable.

b. **Minority performance on the CRT** in grade 10 is acceptable.

c. The **teacher absenteeism rate** is acceptable.

d. The **student absenteeism rate** is acceptable.
e. The **minority absenteeism rate** is acceptable.
f. The **student retention-in-grade rate** is acceptable.
g. The **minority retention-in-grade rate** is acceptable.
h. The **student expulsion rate** is acceptable.
i. The **minority expulsion rate** is acceptable.
j. The **out-of-school suspension rate** is acceptable.
k. The **out-of-school suspension rate** for **minorities** is acceptable.
l. The **in-school suspension rate** is acceptable.
m. The **in-school suspension rate** for **minorities** is acceptable.
n. Rates of **student participation** in the arts and extracurricular activities is acceptable.
o. The rate of student **enrollment in Algebra I, Algebra II, and Geometry** is at or above the established level.
p. The rate of student **completion of Algebra I, Algebra II, and Geometry** is at or above the established level.
q. The percent of students nominated for and selected for the **Governor's Honor's Program** is at or above the established level.

Standard 8: The school adequately prepares the student for the life roles of learner, producer, individual, citizen, consumer, and family member.

Indicators:

a. Students demonstrate positive and realistic **self-concepts**.
b. Students respect and **seek to understand** themselves.
c. Students have **positive attitudes** toward school and learning.
d. Students recognize the need for **lifelong learning.**
e. Students **value the arts,** and respect creativity, beauty and excellence.
f. Students value **cultural diversity**.
g. Students possess personal value systems which emphasize **consideration for others**.
h. Students understand the **impact of the world community** on individuals and society.
i. Students are prepared to **participate as citizens** in our democratic society.
j. Students understand that the quality of human life is enhanced by a harmonious **relationship with the natural environment.**

k. Students are prepared to function as **intelligent consumers** of goods and services.

l. Students are prepared to make **responsible decisions.**

m. Students are prepared to function effectively as **family members.**

n. Students seek to maintain sound **physical and mental health.**

School Characteristics

Standard 9: Teachers and administrators within the school have an appropriate degree of autonomy in addressing school and student needs and problems.

a. Teachers have a large degree of professional autonomy and are encouraged to use their best professional judgment in carrying out the school's mission.
b. Administrators report that they feel they have sufficient autonomy.
c. The principal hires the teachers for the school.
d. The school, rather than the district, organizes the inservice programs for school staff.
e. The principal encourages teachers to try new ideas and techniques intended to promote achievement, and high goals and expectations.

Standard 10: The school principal provides strong instructional leadership to the school.

a. The principal demonstrates strong leadership qualities.
b. Teachers and staff report that they feel the principal provides strong leadership to the school.
c. Teachers and students perceive the principal to have wide expertise in the field of education.

Standard 11: The school has a stable staff.

a. The turnover rate for the principalship is acceptable.
b. The turnover rate for teachers and staff is acceptable.

Standard 12: Parents are involved in and support the school.

a. Parents are aware of students' homework responsibilities.
b. Parental membership and attendance of PTA meetings are acceptable.
c. Parents indicate that they feel the school is doing a good job.

d. Parents are kept informed of the progress of their children on an ongoing basis, through newsletters, teacher and principal communiques, and conferences.
e. Parents have regular opportunities to share their expectations regarding the school programs.
f. Parents are kept informed of school rules and goals, and special activities of the schools.
g. Parents support their children in completing homework and academic assignments.
h. The number and types of parent volunteers in the school are acceptable.

Standard 13: The school promotes school-wide recognition of academic achievement of students.

a. Teachers report that they feel academic achievement is recognized school-wide.
b. Students report that they feel academic achievement is recognized school-wide.
c. The school has an active honor society.
d. Students are recognized for their citizenship and for academic achievements in assemblies, through special recognition by the principal, through award notices sent to parents, and by other public means.

Standard 14. The school environment is organized to maximize learning time.

a. The school has and follows a policy prohibiting loudspeaker announcements, except for emergencies or fire drills, during class periods.
b. The school has and follows a policy prohibiting interruption of class periods for messages to students or teachers, except in cases of emergency.
c. Noise from the halls or outside yard are not sufficient to disrupt instruction during class periods.
d. Teachers begin instruction promptly and maintain student involvement throughout the entire instructional period.

Standard 15: Relationships between and among teachers and administrators is collegial in nature, and staff engage in collaborative planning.

a. Teachers, staff, and administrators report that they feel the school atmosphere is collaborative.
b. Teachers and administrators engage in collaborative planning.
c. Teachers and staff work cooperatively in developing and carrying out schoolwide policies.

d. Teachers and staff are respected as professionals, and their individual strengths are recognized.
e. Teachers and other staff members receive recognition that acknowledges excellence in teaching, curricular knowledge, special abilities to work with other staff or with students, and willingness to contribute extra time on student activities.
f. Teachers frequently observe other teachers and provide feedback to them.
g. Teachers generally enjoy interacting with colleagues from their school.

Standard 16: The students and staff at the school have a clear sense of belonging to a supportive community.

a. Students and staff report that they feel the school environment is supportive and caring.
b. Students and staff report that they have a sense of belonging to or identity with the school community.
c. Students and staff report that they perceive the school as a safe place to be.
d. The school climate supports academic goals.
e. Students report that teachers take a strong interest in their individual academic performances.
f. All students feel welcome and encouraged to participate in classroom learning activities.
g. Teachers respect all of their students.

Standard 17: The school culture presents clear goals and high expectations for students.

a. Students report that they are aware of clear goals for their performance.
b. Students have high expectations for their own performance.
c. Teachers have high expectations for all students' performance.
d. Students have positive self-concepts.
e. Teachers believe that they can influence student achievement for all students, (rather than believing the influence of disadvantaged students' backgrounds to be insurmountable.)
f. Parents, students and staff are all involved in setting standards for behavior.
g. All students are expected to complete all homework assignments.
h. Assignments are reviewed and returned to students in a timely manner.
i. Compared to other issues in the school, such as discipline, peer relations, or participation in extra-curricular activities, the staff and students think academic achievement is very important.

Standard 18: The school maintains an orderly and safe environment.

a. Students and staff report that they feel safe.
b. Students believe that the school's rules are fair and are consistently enforced.
c. Staff believe that the school's rules are fair and are consistently enforced.
d. The school environment is clean and orderly.
e. Violence and vandalism are rare occurrences at the school.
f. The school does not have excessive incidence of drug use or sales.
g. The school does not have excessive incidence of theft.
h. The school does not have excessive incidence of cheating.

APPENDIX C

PROPOSED USE OF NUMERIC DATA FOR SELECTED INDICATORS OF QUALITY

As stated in the body of this paper, once the Georgia CES is fully developed and in place, schools will be visited and reviewed once every five years. We have proposed that, when the CES is fully operational, the evaluation review will consider the status of many outcome indicators (such as graduation rates, dropout rates, attendance, and rates of staff turnover) across the years since the last site visit, rather than limiting consideration to the outcomes of a single year. This would protect schools from receiving an unduly harsh evaluation because they happen to be reviewed during a year when some outcome is unusually low for them. Considering outcomes across all years since the last site review would also help schools keep an ongoing focus on striving for quality of outcomes and will maximize measurement reliability. During the developmental years of the CES, all schools will not have maintained five-year longitudinal records on all relevant student outcomes. Thus, the method proposed for using the longitudinal data had to accommodate cases where data for all years were not available.

We have proposed that the data for a number of outcome indicators be treated in a way analogous to that described below for graduation rate. As the section below shows, if data on yearly graduation rate are available for less than three years, the indicator "overall graduation rate" is simply operationally defined as average across the years for which data are available. If, however, the yearly graduation rate is available for three years or more, the indicator "overall graduation rate" is operationally defined by a formula which incorporates the change in the graduation rate across the years for which data are available. If the school's graduation rate has increased steadily, it will be credited with its highest rate over the span of years; a steadily decreasing graduation rate will result in the school being credited with its lowest graduation rate over the span of years. Minimums and maximums are also set to prevent the rate from being above 1.00 or below 0.00. These limits would be needed only rarely, since, except in very unusual circumstances, the formula will yield a value within the range of rates achieved by the school over the span of years for which data are available.

The next page of this appendix presents the operational definition of the indicator "overall graduation rate." As stated above, analogous operational definitions are proposed for a number of other indicators.

Indicator: The overall graduation rate meets or exceeds the established level.

Operational definition and data elements: Assessment of this indicator requires the collection of two kinds of data elements for the most recently completed school year and for as many previous school years as possible, up to a maximum of five years. The kinds of data elements are (1) the total number of students who graduated from the school at any time during the regular school year (Number of Graduates$_i$) and (2) the Grade 12 enrollment during the school year (Senior Enrollment$_i$). These data are used to compute a graduation rate for the school for each school year for which data are available (G_i). The yearly graduation rate equals the Number of Graduates divided by the Senior Enrollment. The formula for the indicator is based on the average of the graduation rates across all years for which data are available. If data are available for at least three consecutive school years, the indicator adjusts the average graduation rate by an amount that depends on the change in the school's graduation rate over the span of years for which data are available. If the school's graduation rate has increased over the span of years, the school will be credited with that improvement; if its graduation rate has decreased, the school's indicator value will be reduced to reflect its decreasing graduation rate. If the school's graduation rate has increased steadily, it will be credited with its highest rate over the span of years; a steadily decreasing graduation rate will result in the school being credited with its lowest graduation rate over the span of years. The formula will never let the indicator be larger than 1.00 or smaller than zero.

The indicator is operationally defined by the formula:

Overall Graduation Rate

$$= \text{Min}\left[\,\left|\,\text{Min}\left[\,\frac{1}{Y}\sum_{i=1}^{Y}(G_i)+\frac{(Y-1)}{2}\beta\,\right],\,1.00\,\right|,\,\left|\,\text{Max}\left[\,\frac{1}{Y}\sum_{i=1}^{Y}(G_i)+\frac{(Y-1)}{2}\beta\,\right],\,0.00\,\right|\right],\ \text{if } Y\geq 3$$

$$= \frac{1}{Y}\sum_{i=1}^{Y}(G_i),\ \text{if } Y<3$$

where:

$$G_i = \left(\frac{\text{Number of Graduates}_i}{\text{Senior Enrollment}_i}\right)$$

Y = the number of consecutive years for which data needed to compute G_i are available ($Y \leq 5$)

Number of Graduates$_i$ = the total number of students graduating during regular school Year i, including both fall and spring semester graduates.

Senior Enrollment$_i$ = the senior enrollment for Year i:

β = the slope of the regression of G_i on Year$_i$, for the past Y years (with the most recent year numbered "Y," and the most distant year numbered "1"), as derived from the formula:

$\beta = \rho\ (\sigma_y/\sigma_x)$

where: ρ = the correlation of Year$_i$ and G_i

σ_y = the standard deviation of G_i

σ_x = the standard deviation of Year$_i$ = $\sqrt{\frac{(Y+1)(Y-1)}{12}}$

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